

Appln. No. 10/726,179
Amdt. Dated October 13, 2005
Reply to Office Action of
April 18, 2005

REMARKS

Applicants amended Claim 28 by deleting the word "amorphous". Support for this amendment is in the specification at, for example, page 11, lines 21-32 wherein the photovoltaic region is described as comprised of a "semiconductor material." Claim 28 was amended by adding the recitation "having a transmission of light of at least about five percent". Support for such amendment is in the specification at page 16, line 5, page 21, line 1 and page 21, lines 27-30. Claim 28 was amended by adding the word "laser" prior to the word --scribes--. Support for this amendment is throughout the specification; for example, at page 5, lines 1-3. Claim 28 was amended by adding the recitation that the laser scribes provide the transparency. Support for this amendment is throughout the specification; for example, at page 5, lines 1-10. Claims 32 and 33 were amended, as required by the Examiner, by adding the words "of light".

Support for new Claim 49 is provided throughout the specification; for example, at page 8, lines 1-4. Support for new Claims 50-52 is in the specification at page 10, lines 11-15.

Rejection Under 35 U.S.C. §102(b)

The Examiner rejected Claims 28-31, 34, 35, 43 and 44 as being anticipated by Catalano et al., U.S. Patent 4,667,058 (hereinafter "Catalano").

Applicants respectfully submit that Claims 28-31, 34, 35, 43 and 44 are not anticipated by Catalano. Catalano is directed to a collection of electrically isolated solar modules arrayed on a substrate. There is nothing in Catalano that discloses partial transparency as set forth in the above-captioned patent application, and as recited in Claim 28. At column 3, lines 33-35, the photovoltaic modules shown in Figures 1 and 2 of Catalano are described as being used, for example, in calculators. Applicants respectfully submit, therefore, that Catalano does not anticipate Applicants' claimed invention.

Additionally, Applicants respectfully submit that Catalano does not disclose a scribe width of about 0.05 to about 0.2 mm as set forth in instant Claim 30, Catalano does not disclose scribes that are spaced from each other

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about 0.5 to about 5 mm as set forth in instant Claim 31, Catalano does not disclose scribes that are in the form of connected holes, as set forth in instant Claim 34, Catalano does not disclose scribes in the form of connected holes where the holes are round and have a diameter of about 0.01 to about 0.2 mm as set forth in instant Claim 35, Catalano does not disclose scribes grouped in bands of closely spaced scribes separated by bands having few or no scribes as set forth in instant Claim 43, and Catalano does not disclose a grading of the scribes as set forth in instant Claim 44.

Applicants respectfully submit that the sections of Catalano cited by the Examiner as disclosing the elements of Claims 30, 31, 34, 35, 43 and 44 do not disclose such elements. Specifically, they do not disclose scribes having a width of 0.05 to about 0.2 mm, where the scribes are spaced from each other about 0.05 to about 5 mm, where the scribes are in the form of connected holes and such holes having a diameter of about 0.01 to about 0.2 mm, as disclosing bands of closely spaced scribes separated by bands having few or no scribes, and wherein the distance between at least a portion of the scribes is graded. For example, Figure 3 of Catalano does not show scribes through the metal contact layer that are in bands of closely spaced scribes separated by bands having few or no such scribes. Additionally, Figure 3 of Catalano doesn't show where the distance between at least a portion of such bands is graded.

Thus, Applicants respectfully submit that instant Claims 29-31, 34, 35, 43 and 44 are not anticipated by Catalano because Claim 28, the claim from which they depend, is not anticipated, and also because Claims 30, 31, 34, 35, 43 and 44 have elements that are not disclosed by Catalano.

Rejection Under 35 U.S.C. §103(a)

The Examiner rejected Claims 32, 33, 41 and 42 as being unpatentable over Catalano in view of U.S. Patent 4,663,495 to Berman et al. (hereinafter "Berman"). The Examiner stated that Berman teaches a photovoltaic module having a transmission of at least about 10 percent, and that it teaches a window or sun screen.

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Applicants respectfully submit that Applicants' invention is not obvious over Catalano in view of Berman. As described above, Catalano does not teach or suggest Applicants' invention. Specifically, it does not teach or suggest a thin film partially transparent photovoltaic module. The Berman patent does not supply the deficiencies in Catalano. Berman is directed to a transparent photovoltaic module wherein the front contact (referred to as an "electrode" in Berman) and the back electrical contact of the module are transparent. The Examiner is respectfully requested to refer to Berman at column 1, line 65 to column 2, line 10, wherein it states that the photovoltaic module according to the present invention includes:

"a thin film semiconductive layer containing at least one photovoltaic region and having first and second oppositely directed major surfaces, a first transparent electrode for establishing electrical connection to the first surface of the semiconductive layer and for transmitting incident light to the semiconductive layer over a first portion of the solar spectrum, and a second transparent electrode means for establishing electrical connection to the second surface of the semiconductive layer and transmitting incident light to the semiconductive layer over a second portion of the solar spectrum."

In addition, Figure 3 in Berman, as described in Berman at column 3, lines 49-63, shows semiconductor layer 12, first (front) transparent electrode 14, and second (back) transparent electrode 16, and substrate 18, which may be a suitable transparent glass or plastic material. Thus, the transparent layers in the module disclosed by Berman provide the transparency and not laser scribes. Applicants respectfully submit that Berman is not related to Applicants' invention for the reasons stated above, and does not make Applicants' invention obvious.

The Examiner rejected Claim 36 as being unpatentable over Catalano in view of U.S. Patent 4,400,577 to Spear (hereinafter "Spear"). The Examiner stated that Spear teaches a photovoltaic module having an electrical contact or

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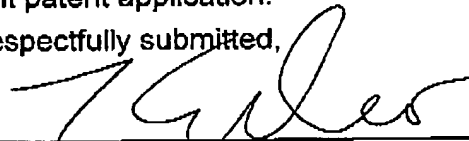
"bus bar" located adjacent to the first and last cell in the module and outside the conductive area or "metal contact area".

Applicants respectfully submit that Applicants' invention is not obvious over Catalano in view of Spear. As described above, Catalano does not teach or suggest Applicants' invention. Specifically, it does not teach or suggest a thin film partially transparent photovoltaic module wherein the module comprises a plurality of laser scribes at least through a metal contact layer. Therefore, the Spear patent does not supply the deficiencies in Catalano. As with the Berman photovoltaic module, the transparency of the solar cells disclosed in Spear appears to be due to the transparency of the layers of each cell and does not, therefore, teach or suggest Applicants' invention where the partial transparency is provided by the plurality of laser scribes.

Applicants respectfully request the Examiner to reconsider the rejection of the instant application, and Applicants respectfully request the Examiner to pass the instant application for allowance.

Applicants also wish to bring to the attention of the Examiner the enclosed letter from the Australian Patent Office concerning the prosecution of an Australian counterpart to the instant patent application. The documents cited in the letter are already of record in the instant patent application.

Respectfully submitted,



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